

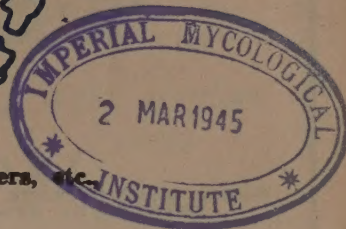
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Vol. 45.

No. 12

DECEMBER 5th, 1944

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South Australian News and Notes

Citrus Culture

Science in Horticulture

Citrus Rootstocks

Tasmanian News and Notes

Vegetable Culture

Storage Rot of Potatoes

Fruit and Vegetable Juices

Canned and Dried Fruits

West Australian Notes

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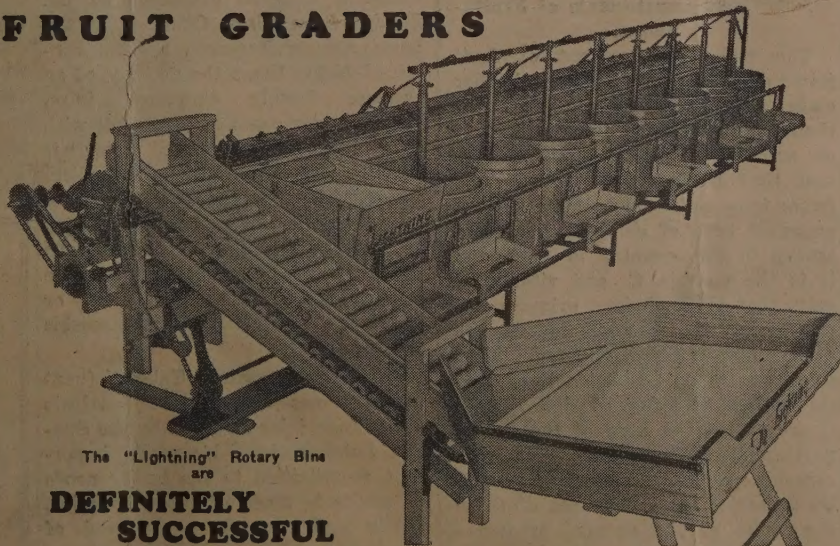
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Extract from "BETTER FRUIT," by Dr. R. L. Webster, Entomologist, State College of Washington, Pullman: CODLING MOTH COVER SPRAYS—"Ever since the imposition of an arsenic tolerance in 1936, and even before that time, investigators have been testing other materials which may be used in place of lead arsenate. Following all these intensive and expensive investigations lead arsenate appears to have certain inherent qualities which place this material foremost as an insecticide for codling moth control."

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Chemical Composition of Fruit Juices

(Continued from last issue.)

Table III (next issue) shows some of the chief constituents of fruit juices. The pre-eminence of the black currant over citrus fruits with respect to vitamin C is obvious; Strawberry and Red Currant are nearly as high as Lemon and actually slightly better than Grapefruit, with the Raspberry only slightly behind. There would seem to be no reason why breeding selectively for ascorbic acid content should not eventually be able to improve these figures. The vitamin C content of 15-27 mgs./100 mls, in Gooseberry juice is by no means negligible especially as the high natural acidity tend to protect the vitamin.

A constituent which merits mention is pectin. The viscosity of expressed juices is very largely attributable to this material, and although the nutritional value of pectin will be alluded to later, I here refer to the chemical aspect. In the existing craze for brilliant, star-bright beverages, it has been the fashion to remove the pectin from fruit juices, either by allowing a natural enzyme action or chemical precipitation to take place, or to add a commercial enzyme which completes its action in a matter of 12-24 hours. In the case of fruits which are extremely pectinous, the enzyme is often added to the milled fruit to facilitate expression of the juice and in this case the original pectin is lost both from the juice and press residues. In the case of citrus and Apple the material left after expression of the juice has a considerable pectin content, which is extractable with dilute acids under steam pressure.

The similarity between the data for Orange, Strawberry and Raspberry, and the higher values for Black Currant are noticeable in the ash constituents. The point of chief importance concerns the very high potassium content. As the natural fruit acids are metabolisable (i.e., used up for energy by the body) the ultimate contribution to acid-base relationships rests with the mineral constituents, which are decidedly alkaline on account of the excess of basic radicals present. German figures by Mehltz found that Na, K, Ca, and Mg (as oxide) contribute 63.7 per cent.

of the total ash, whilst the phosphates, chlorides and sulphates supply only 16.9 per cent. Regular consumption of fruit juices far from accentuating or initiating acidic conditions in the stomach, does exactly the reverse and tends to neutralise acids formed by other causes.

Other vitamins present in fruit juices, i.e., A, members of the B complex and P, will be discussed later.

Fresh Apple juice is given a very low figure for vitamin C. After processing this usually fell to such a low amount as to be negligible, but recently by using most up-to-date methods on pilot plant scale, it has been shown that under certain conditions Apple juice could probably be made containing 3-5 mgs. ascorbic acid/100 mls. Although this is very small, 1,000,000 gallons of such juice would provide 300 lb. of pure ascorbic acid, which would suffice for a daily dose for one year for 20,000 persons. The German production of 27,000,000 gallons would, on the same basis, provide 3½ tons of pure vitamin, or a daily dose for one year for half a million people!!

Nutritional Constituents of Fruit Juices.

The vitamin C content of fruit juices doubtless overshadows all other claims that may be made for nutritional value of fruit juices. It was on account of their vitamin C content that Black Currant syrup and puree were relied on to maintain the youngest ages of children free from scurvy in this country in 1940, and it is the vitamin C, and vitamin C only, that is of obvious primary importance in the rose hip and Orange syrups now being distributed. Thus there can be no hesitation in placing this pre-eminent fact of high vitamin C content at the head of the list of nutritional values. The fact that ascorbic acid can be obtained in synthetic tablet form does not diminish the value of the natural product—especially in war time, when the production of the synthetic chemical is below the demand. The tendency in nutritional circles, however, is to prefer the natural sources of vitamin C wherever possible. Tablets have certain obvious advantages for the administration of massive doses, but

with the production of more highly concentrated fruit products, even this advantage will become less prominent.

When tablets of vitamin C are consumed, the sole contribution to the human system is a chemical known as ascorbic acid. When a similar quantity of ascorbic acid from a natural source is taken, many other constituents are simultaneously taken into the system, each of which may have specific effects, or may affect each other. The relatively high price of natural vitamin C is, therefore, based on a calculation which neglects entirely the other constituents and properties of the fruit juice. Some of these other characteristic constituents will now be indicated.

(a) Vitamin P. It is only quite recently that scientific opinion has accepted the probability of the actual existence of this so-called vitamin. But the consensus of opinion now appears to favour the existence of a chemical which affects the permeability and fragility of the capillary blood vessels.

National rose hip syrup, Black Currant juice and puree, Rowan Berries, Tomatoes, Blackberries and Bramley's Seedling Apples contain this vitamin in varying amounts, whilst a material extracted by Dr. Follard from Black Currants at the Long Ashton Research Station contained 10,000 times the activity of an average freshly expressed juice. When precise cases of treatment with fruit juice are discussed later, it must be remembered that the medical and nutritional workers concerned are regarding with interest the possibility of vitamin P being connected with the relief of certain symptoms, the vitamin acting independently of, or in close association with, ascorbic acid.

(b) Other Vitamins. Table V (next issue) shows the complete analysis for Orange juice as given by the Sun-kist Laboratories. No really important contribution to the bodily needs of adults is made of these vitamins, but in some cases the actual needs of the body are not yet ascertained.

(c) Pectin. Although most of the medical work to date has been carried out on pectin obtained by a process of extraction and purification from fruit residues after juice extraction, it is of interest to discuss such work at this point in view of the possibility

of pectin exerting a similar influence when taken in the form of a fruit juice. The use of a sterile 1 per cent. pyrogen-free, buffered solution of pectin intravenously as a blood plasma substitute is growing amongst clinical investigators in the United States. Its value in shock has also been examined, whilst the effect of its administration on internal bleeding has been studied both abroad and in this country. Concentrated Apple jellies containing the full natural pectin of the fruit juice were supplied by the writer several years ago for the successful stoppage of acute internal haemorrhage in an adult; this was thought to be due to the pectin content.

(d) Alkaline Reserves. This has been mentioned in the chemical analysis section, but it is emphasised here that this contribution to the alkaline reserves of the body is probably one of the most important effects of the consumption of fruit juices.

(e) Calories. Most juices contain about 8-10 per cent. of sugar, and as such contribute appreciably to the total calorie intake required. Table VI contains the data for intake from one pint of Apple juice, or 2 f. oz. of Black Currant syrup, both chosen as reasonable daily consumptions of the two beverages. The Black Currant syrup figures are low because the product contains much added sugar, whilst the Apple juice is consumed neat. One pint of Apple juice thus provides the 10 per cent. of the total calorie needs for the day.

(To be Continued.)

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December 5th, 1944,

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NEWS OF THE MONTH

THE WAR.

Progress continues to be made on all fronts against the Germans and there is every hope that Germany will be militarily defeated during the first few months of 1945.

This will enable greater strength to be brought against the Japanese aggressors. There is need for Australians to act unitedly and wholeheartedly to assist in the defeat of our enemies. There is no room for complacency.

The revelations of the horrors of the Japanese prisoner-of-war camps came as a great shock to this community, and will spur our citizens on to put our full measure of strength into the war effort.

The actions of nations in the liberated areas are being followed with the closest interest. These will have a bearing on the future of Australia. The general tendency appears to be towards co-operative control of major enterprises on behalf of the people as a whole instead of the control as previously by monopolies and privately financed groups.

NEWS IN BRIEF.

Supporting the urgent demand for a reafforestation policy to check soil erosion the A.D.F.A. points out that Australia had only 2 per cent. of its area under forest, compared with Russia 40 per cent., Canada 32 per cent. and U.S.A. 25 per cent.

SOIL EROSION.

For many years past attention has been called to the need for collective action to prevent soil erosion, but the evil remains. Only action by Commonwealth and State Governments can arrest this evil and prevent further national losses. This country is in peril because of past errors which have brought about erosion, yet evil anti-social practises are still going on. The Dried Fruits Industry has raised its voice against the present criminal folly. Among other evils the Murray waters are being silted up. It is stated that these settlements are in danger of being in a parlous condition within 20 years. Producers must take this matter up positively with their Federal and State Parliamentary representatives so that the needed corrective action shall be taken without further delay.

Obituary

T. J. PEART, BAIRNSDALE, VIC.

A Pioneer of the Fruit Industry.

Mr. Thomas Johnson Peart, one of Bairnsdale's oldest residents, and a pioneer of the fruit industry, died at the Bairnsdale District Hospital on November 7.

Born at Melton in 1865, he travelled in a dray with his parents (the late Mr. and Mrs. Jacob Peart, his brother the late Mr. J. W. Peart and sister, the late Mrs. C. J. Goodman) to Hillside in 1875. There the family remained until 1883, when his father purchased a property of 75 acres at Picnic Point, which was utilised for vegetable and fruit growing. Subsequently the late Mr. Peart established his own orchards and in 1909 he pioneered the fruit growing industry at Sarsfield, where he established a large orchard of Apples, Pears, Plums and citrus fruits. He proved the adaptability of this class of land for fruit growing and exported Apples for many years, topping the London market on one occasion. The quality of the fruit was equal to anything exported from Victoria.

The late Mr. Peart was an uncle of Mr. G. W. Peart, orchardist and nurseryman, formerly proprietor of the C. J. Goodman Nurseries.

The late Mr. Peart had a cheery disposition and amongst his many relatives and friends he was always highly esteemed. His passing will be deeply regretted by them all.

The late Mr. Peart is survived by his widow.

Sympathetic reference was made at the annual meeting of the A.D.F.A. Federal Council to the loss the A.D.F.A. and industry had suffered on the deaths of Mr. R. A. Haynes, A.D.F.A. representative in South Australia for 14 years, who, as Commonwealth Trade Commissioner did good work in pioneering trade in dried fruits with Canada, and of Mr. L. McLeod, N.S.W. growers' representative on the Commonwealth Dried Fruits Control Board since 1931.

DEATH OF MR. A. R. TOWNSEND, O.B.E.

In the 13th Annual Report of the Fruit Industry Sugar Concession Committee deep regret was expressed on the death of Mr. A. R. Townsend. Mr. Townsend had been Chairman of the Committee since its inception in 1931. He had devoted himself unreservedly to his important duties and won the esteem and admiration of his colleagues.



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PERSONAL

Mr. F. L. McDougall, C.M.G., Chairman of the London Agency of the Commonwealth Dried Fruits Export Control Board, has submitted a very interesting and comprehensive report on his recent visit to California.

The Californian raisin pack for 1939 was 245,000 tons and of this 74% was consumed domestically. Cost of water and labour were lower than in Australia and fertilisers were not used extensively. He said that research is now being carried out to improve the quality of the product. Mr. McDougall thinks it is possible that the present level of prices for Grapes and wine Grapes is likely to lead to the planting of additional areas.

Mr. Leonard Judd, Senior Agricultural Instructor in N.S.W., has been appointed as executive officer in the Farm Mechanisation Scheme, which

was introduced last year by the Premier as a means whereby dairy production would be increased.

The Minister for Agriculture, N.S.W., has announced the appointment of Dr. C. J. P. Magee as Chief Biologist of the Department, following the appointment of Dr. H. J. Hynes as Chief of the Division of Marketing and Agricultural Economics.

Dr. Magee has had a brilliant career and has taken degrees from the Wisconsin University, U.S.A., and the Sydney University.

Mr. A. C. Enticknap, M.L.A., member for Murrumbidgee, N.S.W., who always ready to support the grower, has mentioned in Parliament that if Australian air transport were properly developed Peaches from the Murrumbidgee area would be on sale in London three days after being picked.

Mr. Enticknap was advocating airports for primary producing areas,

which, he said, would open world-wide markets to Australia's primary products.

After some discussion the House agreed to support a suggestion for the enlargement and modernisation of Mascot Aerodrome, and that the Federal Government be asked to develop other aerodromes throughout N.S.W.

GIPPSLAND & NORTHERN
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Satisfactory Year of United Effort.

The 39th annual meeting of shareholders of the Gippsland & Northern Co-operative Co. Ltd. was held on 22nd November and presided over by Mr. J. Langham, Chairman of Directors.

The profit for the year was £38,352/13/1. A dividend of 5% was declared plus bonuses to butter and cheese companies.

Mr. A. W. Wilson, General Manager, read the report for the Chairman of Directors.

SUPERPHOSPHATE RATIOS FOR
1944-45

Victorian Allotments.

THE SUPERPHOSPHATE RATIONING plan for Victoria for the current year (1944-45) is announced by the Director of Agriculture, Mr. H. A. Mullett. Unless the manpower shortage at the fertilizer works is relieved, Mr. Mullett points out manufacturers will be unable to convert into superphosphate the full quota of phosphatic rock allocated to Victoria for this year.

If sufficient manpower is made available the ordinary ration for non-priority crops and pastures will be double that of last year, equivalent to one half of normal usage. The supplementary ration for dairying and irrigated pastures will be the same as for last season, which, together with the ordinary ration, provides a total quota approximately equal to normal usage.

However, in view of the possibility that the full amount will not be manufactured, it has been found necessary, for the time being, to limit deliveries to two-thirds of the full ration, except in cases where the ration does not exceed four tons, or where the fertilizer is for priority crops.

The superphosphate ration for orchardists will be 1 cwt. per acre for the area under fruit trees and vines, and, as in the past, special allotments of fertilizer will be issued for vegetables, potatoes, flax and other priority crops.

Farmers must order their superphosphate from the same company or distributor from whom they purchased their supplies last year. Many growers can now obtain their total ration for the year and others a considerable portion of their full quota. Farmers are urged to lodge their orders immediately and take delivery at the first opportunity, so that the limited transport available can be used to the best advantage.

AUSTRALIAN 1945 APPLE CROP.

Reports indicate that Apple crops will be light in Victoria, New South Wales, Queensland and South Australia. There are indications of medium to good crops in Western Australia and Tasmania.

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Spraying Notes

PEST CONTROL IN W.A.

The first brood of Apple jassid was noticed in the Bridgetown district during the second week in October. It is very pleasing to note that the initial infestation is much less than at the same time last year. Apple curculio is causing considerable damage in unsprayed orchards in the Manjimup and Bridgetown districts.

The incidence of fruit fly has been very slight and provided control measures are carried out conscientiously by growers during the next month or so, infestation should be kept at a minimum.

In the Albany district, powdery mildew is showing up, but it is restricted in a severe form only to isolated orchards.

Owing to the dry Summer experienced last year, many fruit trees are not making the luxuriant growth that one is accustomed to see at this time of the year.

Other factors which have contributed in this direction are the heavy crops carried by most orchards last year and the dry conditions experienced during the present Spring and early Summer.

FRUIT FLY IN W. AUST.

Mr. C. F. H. Jenkins, Western Australian Government Entomologist, says that methods of "trapping" Mediterranean Fruit Flies have been effective in the past few years but more recent investigations have shown foliage baiting to be more efficient and more easily and speedily applied. The Fruit Fly is partial to sweetened solutions and of the investigations carried out sodium fluosilicate has given the best results.

The recommended bait formula consists of the following ingredients:

Sodium fluosilicate . . 1oz.
White sugar . . . 2½ lb.
Water 4 gallons.

As a rough guide 1 gallon of spray is sufficient for 40 fruit trees or 100 vines and the maximum period between treatments should be 6 days and should commence at 6 weeks before the crop is ready to pick.

FRUIT FLY.

Compulsory Measures in N.S.W.

Whereas commercial fruitgrowers are active in their efforts to combat Fruit Fly, the Department of Agriculture found it necessary to issue a warning to home gardeners that measures for control of Fruit Fly are compulsory. These include the use of foliage poison baits and the regular destruction of fallen and infected fruits.

PRE-HARVEST DROP OF APPLES AND PEARS.

Control by Use of Spray.

THE USE OF NAPHTHALENE ACETIC acid spray results in a substantial reduction in the pre-harvest drop of Pome fruits. Mr. E. C. Whittaker, Fruit Instructor, and Mr. P. B. Mackenzie, Fruit Inspector, N.S.W. Department of Agriculture, reported that this decision had been reached after trials had been carried out by the Division of Horticulture during the last 3 years.

Various substances were tried out but naphthalene acetic acid used in the following form was found to be most satisfactory:—

4.8 grains of naphthalene acetic acid per Imperial pint and used at the rate of 1 pint of the solution to 100 gallons of water. The addition of from 1 pint to 1 quart of white

oil to the 100 gallons, used as a spreader and sticker, is recommended and seems to be an advantage.

To be fully effective the whole tree will have to be thoroughly drenched and special attention paid to the fruit clusters. The spray does not take effect for 2 or 3 days and only remains effective for 3 weeks, so it is most effective to spray at the time of commencement of the usual pre-harvest drop.

ARMILLARIA ROOT ROT OF FRUIT TREES.

The Honey fungus, *Armillaria mellea*, one of the common toadstools, causes the destruction of many native and cultivated trees. The host range includes forest and orchard trees, citrus, small fruits, Grape vines, etc. It infects the roots and basal portions, gradually weakening the tree and finally killing it.

Mr. S. Fish, Biologist of the Victorian Department of Agriculture, advises that when uncleared land for a horticultural project is being selected it is well to avoid *Armillaria* infected country. Recent observations on forest-clearing in relation to *Armillaria* suggest that trees should be ring-barked in the Autumn prior to felling, thus making any roots or stumps less liable to infection.

Wooden stakes, fencing posts, underground drains, etc., may be attacked and these serve as sources of infection. Such structures should be "creosoted" before they are put in the ground.

Trees which have died or are in an advanced stage of the disease should

be removed, together with as many diseased roots as possible, and burnt on the spot.

Drainage should be watched and the health and vigour of trees maintained.

PEST DESTROYER D.D.T.

Developed in the United States, a new destroyer for pests is named dichlorodiphenyltrichlorethane.

All supplies available in Australia are being used by the services. Commercial production in Australia is being planned and will commence early in 1945.

The usefulness of D.D.T. in agricultural practice in Australia remains to be proved, although its extreme usefulness overseas suggests that it will be of considerable value.

Experiments are now in progress to determine the usefulness of the material, so that when additional supplies are produced basic information will be available which will establish its best uses in agriculture.

BORON NUTRITION OF THE GRAPE.

(L. E. Scott, University of Maryland, College of Agriculture, College Park, Md.)

An abnormal condition in growth and fruiting of a vineyard on a Norfolk (U.S.A.) sand soil was corrected by the application of borax at the rate of ten pounds per acre. Severity of the deficiency varied widely between varieties. Boron greatly increased fruit set of reflex stamen varieties.

Fruit production was increased by borax application in certain instances when there was little or no observable boron deficiency symptoms on untreated vines.

Sand cultures with two-year-old vines developed boron deficiency symptoms within thirty days after growth inception and confirmed the field experiments.

Leaves from fifteen varieties were analyzed for boron by the quinalizarin method at intervals during the growing season. The boron-calcium ratio in the leaf and stem tissue of normal and deficient vines was also determined.—"American Fertilizer."

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WESTERN AUSTRALIA.

SUCCESSFUL CO-OPERATIVE ENTERPRISE.

THE SPLENDID PROGRESS of the Mt. Barker (W.A.) Co-operative Ltd. was emphasised

early in November at the official opening of the No. 2 Cool Store. This new store will hold 20,000 cases, making a total of 50,000 case space available at the Mt. Barker Stores. The official opening was performed by Hon. H. W. Kitson, M.L.A., Chief

Secretary (representing the Premier and the Minister for Agriculture, neither of whom were able to attend.

Pleasing comments were also made by Mr. A. F. Watts, M.L.A., Mr. J. McN. Martin (President W.A. Fruit-growers' Association), and H. W.

Soothill (general manager Mt. Barker Co-op.).

Prior to the opening, the official visitors inspected the cool stores, also the dehydration plant. It was stated that a new cool store would soon be erected at Kendenup.

The proceedings were continued in the evening by the holding of a social and dance, attended by about 500 people. Visitors could not fail to notice the tastefully constructed design, worked out in living flowers, and spread right across the stage, containing the word "Co-op." This was the work of Mrs. A. Hickling.

The Mt. Barker Co-op. is an effective power in the interests of the district. Growers' requisites and stores of all kinds are handled. There is a measure of the pride of achievement in the knowledge that the financing of the enterprise has been by local growers, and without Governmental assistance.

Frosts damaged the Orange crops in Western Australia and also affected Cherries and stone fruits in the Clackline-Wundowie districts—Currants and Sultans as well.

The foregoing is stated in the report for October from Mr. H. R. Powell, W.A., Superintendent of Horticulture.

Mt. Barker, 9/11/44.—Mr. J. McNeil Martin writes: So far the season gives every indication of being dry, but the trees look well. Pears generally are heavy, but Apples are variable. Jonathans generally heavy, Yates the same, Rokewood variable, Dunns variable, Doherty heavy, Cleo heavy, Granny Smith generally light, some parts heavy, others right off.

On the whole there appears to be a 70-75 per cent. crop.

Sheep, dairying and beef raising, together with fat lambs, are the other sources of income for this district. Wool will not be as heavy a clip as last year; a bad season is playing up with stock.

Manjimup, 3/11/44. — The crop prospects for Apples in this district appear as follows, up to the present. Jonathan, good setting, heavy; Cleo, heavy setting; Dunns, blossomed patchily; Statesman, good; Yates, medium to good; G. Smith, average to heavy; Delicious, good setting; Wine-sap (Stayman), light to fair; Rokewood, average; Dougherty, heavy; Rome Beauty, appear to be light.

We are short of our average rainfall. October was one of the driest on record.

Mr. Tom Herlihy, our Horticultural inspector, has been transferred to Bridgetown after being here four years. He was the first inspector to be actually located in the district, and the growers were sorry to lose him. He is succeeded by Mr. Hanbury, who was lately in charge of the Harvey district.—J. F. Kammann.



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Tasmanian News and Notes

GOOD AVERAGE CROP OF APPLES AND PEARS FORECAST — ABSORPTION OF WHOLE CROP IN MARKETING AND PROCESSING LIKELY — CONTINUED ACQUISITION DESIRED AND HIGHER COMPENSATION — DIRECT SHIPMENTS FROM PORT HUON RECOMMENDED.

(By Our Correspondent.)

AS THE SEASON ADVANCES it is possible to give a rough estimate of the crops in the northern areas. The weather was comparatively favourable for setting a crop, but owing to the very heavy crop last year, many trees blossomed lightly and the want of fertilizer in reasonable quantities no doubt helped to lessen the blossoming.

Pears appear to have set well in most places, especially B. Bosc and W. Coles and Packham's, though some orchards are light in these varieties.

Apples are patchy: Cox Orange in some orchards are good, but the average is, I think, only fair. Jonathans also are irregular, Democrats appear to be fair, also Grannies and Croftons.

So far blackspot is not much in evidence, and as the weather has been breezy, it should be negligible in open situations, where the early sprays were applied on time.

Cultivation appears to be well done in most of the best orchards. Given an Autumn rainfall the crop should be satisfactory.

In the southern districts the weather continued to interfere with the routine work being squally and rather wet, both the pink and the calyx spray were put on under difficulties, and cultivation was delayed, the ground being too wet at first and then a hard crust forming when the high winds set in. However, the weather improved late in November.

Apples seem to have set fairly well, but not as heavy as last year.

Cox's Orange appear to be a normal crop, Jonathans patchy and a bit below normal. Cleos a good average crop. Scarlets have set heavily in places, Democrats appear to be heavier than last season, some crops being heavy; Grannies are a bit below normal, but as a lot of young trees are coming into bearing the total may be more than first appearances indicate. Sturmers are about an average crop.

W. Cole Pears are definitely patchy, some require thinning, while others are bare. Packham's seem a fair crop, Josephines are very good in many places, other varieties about normal.

So far, in spite of unfavourable weather conditions there is little black spot showing in the open situations, but I expect there will be some in the sheltered gullies.

Codling moth does not make its appearance in the south as early as on the mainland, and strikes are not in evidence much before December 20. Canary fly and red spider are not showing up yet to any extent, but no doubt will require attention later.

The present indications are that practically all the crop will be utilised either as fresh fruit or in the many processed articles.

Berry fruit beds are looking very well considering the short supply of fertilizer they have received, and the total crop will be required and even then more will be wanted. Kentish Cherries are almost a thing of the past owing to the blackbirds which practically take the lot and pay for them with a mere song.

The Gooseberry season has commenced in earnest, and Raspberries will begin about Christmas in the earlier districts, also Loganberries. Fruit pickers will be in demand.

No definite statement has yet been received regarding the Government's decision concerning acquisition of the coming crop, and growers are in doubt as to what case material to get in. We hear that it will be continued, but not officially.

The compensation paid should be higher as costs have increased and the crop will not be as heavy and the demand greater.

Importance of Port Huon

One of our most useful post-war works in the south would be the repair and maintenance of the deep water wharf at Port Huon. Several million bushels are grown within a radius of 15 miles, which at present is carted up to Hobart over a hilly road and stacked (if there is room) on the Hobart wharf. A saving of 3d. per case in cartage alone would be effected by using the Port Huon wharf, which would pay for repairs and maintenance twice over and save a lot of rough handling and resultant damage to fruit.

The way Tasmanian fruit is marketed in Sydney is still causing a lot of adverse comment, one complaint is that nothing but mixed lines can be supplied under the present system of branding and stacking. I heard of one lot of 20 cases having 18 different growers' fruit in it. Buyers naturally want such job lots cheap.

As this issue will be the last for 1944, I wish your readers the compliments of the season and a prosperous New Year.

QUEENSLAND.

Fruit and Vegetable Enquiry.

Legislation to Implement Recommendations of Royal Commission.

The Premier of Queensland (Mr. Cooper) recently stated that the Government was giving earnest consideration to the findings of the Royal Commission into the fruit and vegetable industry. Owing to the amount of work before Parliament it was unlikely that legislative action would be taken until the new year.

Question in Federal Parliament.

In the Federal Parliament, Mr. Fadden recently directed attention to some of the findings of the Royal Commission in Queensland on Fruit and Vegetables—that the price fixing law was not being observed by many agents and retailers, and that this evasion was a detriment to the public and to the honest trader.

The Attorney General (Dr. Evatt) replied that steps were being taken to ensure that maximum prices shall not be exceeded.

FRUITGROWERS' DEFENCE LEAGUE.

On November 9 the Melbourne Metropolitan District Council of the Primary Producers' Defence League met at E. Doncaster. Delegates attended from Diamond Valley, Doncaster, E. Doncaster, Burwood, Wandin, Vermont and Scoresby. The President, Mr. J. H. Tainton, was in the chair.

Secateurs: The Minister for Munitions (Mr. Makin) wrote stating that adequate quantities of secateurs and parts were being imported to meet Australia's needs for 12 months. The Secretary (Mr. G. E. Handasyde) reported having consulted the Directorate of Machine Tools and Gauges and the Victorian Manager of Pope Products Ltd. and that the quality of Australian-made secateurs would be improved.

Horticultural Research: It was reported that negotiations were in progress for the purchase of suitable land for the S. Victorian Horticultural Research Station. The co-operation of the Defence League was tendered. It was decided to ask the Department of Agriculture for latest advice re control measures for Apple Root Borer, Collar Rot of Lemons, and for increased research into these problems.

Items relative to sales of service motor vehicles to civilians and depreciation of a special nature as an Income Tax concession to producers were referred to the League Council for action.

It was decided to convey good wishes to Mr. Arnold Noble (Tyabb) who is slowly recovering in hospital from a breakdown last August.

Delegates expressed appreciation of work done and results achieved by Committee and Secretary.

Stationary Spray Plants: An instructive talk on "Some Advantages of a Stationary Spraying Plant" was given by Mr. F. C. Pyke. Many questions were answered, and Mr. Pyke was thanked.

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DRIED FRUITS

AUSTRALIAN DRIED FRUITS ASSOCIATION.

The 22nd annual meeting of the Federal Council of the A.D.F.A. was held at Mildura early in November. Mr. L. B. O'Donnell presiding. There was a representative attendance of delegates.

Concern was expressed because of the effects of erosion in denuded watersheds resulting in siltation of water storages and a reduced flow of water in the River Murray.

It was stated that unless steps were taken to repair the ravages of erosion, the Murray dried fruit settlements would be in a parlous condition in 20 years time.

Brief notes from the Secretary's report are:—

1. The Australian dried fruits crop for 1944 was a record—approx.

103,706 tons, compared with 90,881 tons in 1943.

2. The Australian Dried Tree Fruits for 1944 is estimated at 5,911 tons as compared with 4,734 tons in 1943. Pears showed a considerable increase.

3. Currant and Sultana packs were records, being 25,195 and 67,975 tons respectively.

4. Lexias, Apricots, Peaches, Nectarines, Pears and Prunes all provided packs in excess of last year.

The need was stressed for higher priority for manpower for harvest labour and packing.

During the past season owing to climatic conditions, dehydration was proved to be an important adjunct to the sun drying method.

Growers were urged to provide for heating in vineyards to combat frosts.

On the subject of future plantings Mr. P. Malloch had given evidence before the Rural Reconstruction

Commission relative to overseas markets and the implications of the Atlantic Charter. Until there was further light on these matters further plantings of vines should be contingent on the development of markets.

It was noted that costs were on the up grade both as regards wages and materials.

Production Materials.

Manures had come along more freely than in the previous year, although supplies of sulphate of ammonia and organic manures had been generally unobtainable. There had been some further releases of wire netting, wire and sheet iron, but galvanised iron was difficult to obtain.

The retiring members of the board of management, Messrs. P. Malloch (Mildura), J. H. Gordon (Red Cliffs), J. B. Murdoch (Walkerie, S.A.), and E. J. Hudson (Yenda, N.S.W.), were re-elected. The remaining members of the board elected last year were Messrs. H. D. Howie (Renmark, S.A.), chairman, D. C. Winterbottom (Mildura), and A. R. Lawrence (Nyah).

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COMMONWEALTH DRIED FRUITS CONTROL BOARD.

Arrangements are being made for the biennial election of representatives of the growers on the Commonwealth Dried Fruits Control Board to hold office as from February 7, 1945.

A list of growers of dried vine fruits has been forwarded to each packing shed. Growers should inspect such list at their local shed so as to satisfy themselves their names are included. The manager or proprietor of the shed has been requested to notify the deputy returning officer of any names omitted in order that they may be added to the certified roll to be used at the election.

A nomination for election as growers' representative for this State must be lodged with the deputy returning officer, Commonwealth Electoral Office, 85 Collins-street, Melbourne, on or before December 14, 1944. The prescribed form of nomination is obtainable from the deputy returning officer. To be valid a nomination must be signed by at least ten growers entitled to vote at the election.

SOUTH AUSTRALIA.

Waikerie (6/11/44).

Mr. E. A. Everett states—Re fruit crop prospects.—Local growers report that vine crops are showing nicely.

Vine Section.—We are fortunately situated, and have little or no worry with frosts. Gordos are particularly good.

Citrus Section.—Very pleased to say that citrus trees are looking splendid and present indications show usual good all round crop. January, of course, is the best month to estimate.

FIELD DAY AT RENMARK.

On November 21, the Renmark North and Chaffey Agricultural Bureau held a field day on the property of Mr. J. H. Snook.

During the day a talk on problems of drainage, reconstruction and inferior soils was given by Mr. A. G. Strickland, M.Ag.Sc., Chief Horticulturist.

In the evening, Mr. Strickland gave a further lecture in the hall.

VICTORIAN CHAMBER OF FRUIT AND VEGETABLE INDUSTRIES.

We are advised by Mr. H. M. Wade, Secretary of the Wholesale Fruit Merchants' Association of Victoria, that as from November 22, 1944, the name of the Association has been changed to the Chamber of Fruit and Vegetable Industries. The office is at the same address and correspondence should be addressed to Wholesale Fruit Market, Melbourne.

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Patent Attorney

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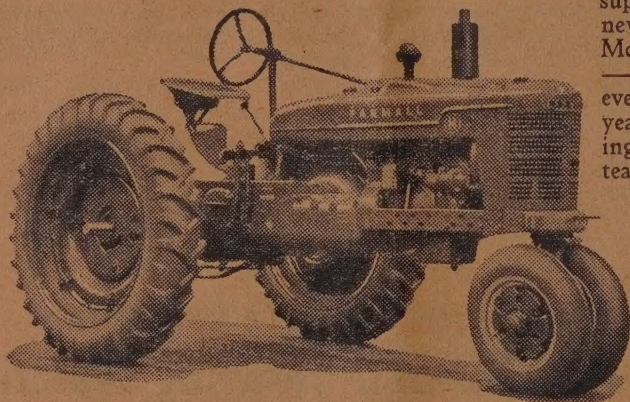
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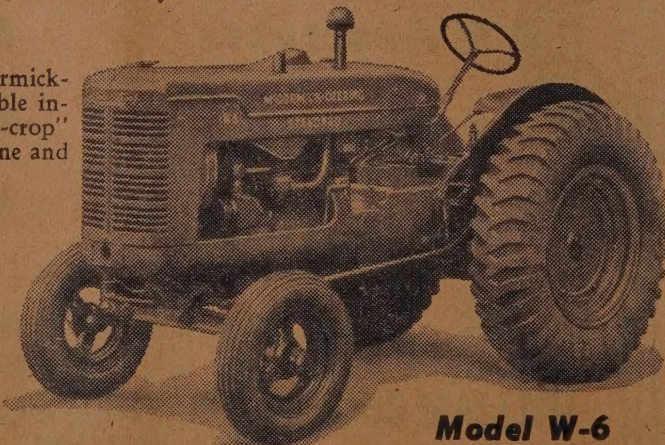


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Citrus News & Notes

DOUBTFUL VALUE OF INTENSIVE CULTIVATION — COVER CROP — MANURIAL METHODS DISCUSSED — USE MINIMUM QUANTITY OF WATER WHEN IRRIGATING.

NEED FOR MORE SOIL AND OTHER RESEARCH.

(By A.E.C.)

IN A DISCUSSION on cultural practices as related to citrus growing, recently a grower remarked: "When will we know what is the right thing to do." He was referring to the contradictory statements made by "authorities" on horticultural methods.

An instance of this is found in a short note in the June "Citrus News" and an article in the California "Citrograph" of the same month. The former is attributed to the director of the N.Z. Horticulture Division and states that the effect of cultivation on soil organisms, bacteria and the like was often overlooked. It is to these silent workers, he said that a rich soil mainly owes its fertility. "Thorough aeration, obtained only by cultivation and good drainage, is necessary for the micro-organisms to thrive and carry on their important work of soil improvement." The American article is written by the manager of a 4,300 acre citrus and general farming property, and he condemns cultivation as being unnecessary as well as the cause of serious damage to the soil, ultimately bringing about its complete destruction. He states the principal reasons for cultivation to be (1) Prepare the land for watering; (2) to mix organic fertilizer with the soil; (3) to control weeds which compete with citrus trees for fertilizer and water.

It will be noted that no mention is made of any need for cultivation to conserve soil moisture, but this is in line with general opinion in these days that loss of moisture from soil by evaporation is small, as compared with the amount transpired by the growing tree or crop. This opinion is contrary to the beliefs of a quarter of a century ago, when it was thought to be necessary to cultivate continuously in dry weather. This practice is now condemned by most experts.

The writer of the article supports the use of oil for control of weeds and submits a comparison of costs of doing this with oil and by cultivation. The latter was stated to be 15 dollars per acre and the former to range from 10 to 100 dollars per acre, according to the types of weeds and the quantity of seed present in the soil. Advantages are not defined in terms of crop increase, but it is stated that the "condition of trees and fruit yields are fully as good, if not better than before the changes in management were made." More satisfactory water penetration and somewhat smaller requirements of nitrogen had been observed.

It was found that nitrates were better maintained in the absence of cultivation, probably because there was no competition from crops of weeds and with no cover crops which cause loss of nitrogen in the process of decay. It was also argued that cultivation prevented the roots from penetrating the upper six inches of soil which is regarded as the best.

Another question raised was, do we need organic fertilizer such as farmyard manure? In answer to this it was stated that it might be pos-

sible to get along without it, particularly if cultivation is dispensed with. One six-year experiment indicated that the best production and lowest cost were obtained where only chemical nitrogen was used. This latter statement receives some indirect support from the report of an opinion recently expressed by N.S.W. soil chemists that citrus trees derived no benefit whatever from the use of cover crops.

Many varied practices amongst citrus growers in N.S.W., Vic. and S.A., may be recalled to illustrate the justification for the question asked, and quoted in our opening para. There is the big citrus property in U.S., which carries weed and cereal growth most of the year, the only cultivation being that required to re-make irrigation furrows.

In a N.S.W. irrigation area, permanent cover growth was maintained, including lucerne, and clovers of several varieties, the only work done by implements being an occasional cutting of the "crop" with a mower. In Victoria the universal practice is cultivation, and the growing of green manure crops when practicable.

So far there is little evidence to support any particular method as being of outstanding value. It is agreed, and the writer of the "Citrograph" article made this point, that what applies to one type of soil and climate, may not be satisfactory in another.

It can be generally admitted, that we know very little about our soils

and the right way to treat them, and that there is an enormous field of research, waiting to be broken, when the need is realised and the trained workers are available to do the job.

Then the question will arise with greater emphasis than to-day, and that is saying a lot. "Will growers generally take advantage of the knowledge gained and apply the results of research?"

The outstanding lesson which should have been learned by citrus growers in the last few years is the danger of too lavish a use of irrigation water. Research workers have proved beyond doubt that most citrus trees are living on a root system which occupies no more, and frequently much less, than the top two feet of soil. They may have, before damage was done, extended some roots to a lower level, but these have since been drowned by a risen water table.

It is obvious then, that it is unnecessary to water the soil to a greater depth than that occupied by the roots.

It should be possible to restrict penetration to this depth on the greater part, at all events, of the average grove. This should have the effect of a gradual drying out of the lower section and would possibly encourage the penetration of roots again to this soil, at all events preventing damage to those at present functioning.

The answer may be found in the re-construction of water distribution facilities within a grove, possibly by the use of the sprinkler method in some cases, certainly some benefit would be derived by the shortening of irrigation "runs" to a maximum of about three chains in most instances, provided it is accompanied by an acceptance of the view that no

benefit is gained from the watering of soil beneath the root occupied zone, and that there is positive danger from so doing.

Very few growers are yet prepared to accept and apply in actual practice, the view that if irrigation water will penetrate to the full depth of the functioning roots in say two hours that their irrigation of a land or furrow should only occupy a little more than that length of time.

Agriculturists, which includes fruitgrowers too, are notoriously conservative, and cannot be blamed for being too cautious to take risks with the crop or plantation which is their livelihood, by for instance rushing from the one extreme of overwatering, to the other of strict limitation of supply of moisture in one season.

The grower starting out on new land, in its naturally dry state, with no possibility of the existence of underground water, is, however, in a favourable position to practice the watering of his trees according to their actual needs and not, as has been the rule in the past, according to the full absorptive capacity of the land.

There is no doubt either that many of the older groves would respond favourably to a change from long soakage irrigation periods to a restricted one, without any great risk being taken.

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CITRUS ROOTSTOCKS.

Important Tests at Irymple, Vic.

Sweet Orange Stock Shows Up Best.

TESTS HAVE BEEN MADE on citrus rootstocks by the Victorian Department of Agriculture in the Mildura irrigation districts since 1934. The following is a brief summary of the report, submitted by Mr. J. L. Provan, B.Agr.Sc., Principal, School of Primary Agriculture, Burnley, and Mr. C. E. Cole, B.Agr.Sc., Senior Horticultural Research Officer:—

Fourteen years ago, the Department of Agriculture decided to establish a trial of rootstocks for Orange trees. Now, in 1944, it is possible to present a few interesting features of the experiment. The final results may not be obtained till another forty or fifty years have passed.

In 1931, carefully selected seeds of Sweet Orange (*Citrus Sinensis*), Sour Orange (*Citrus Aurantium*),

and Citronelle (*Citrus Limonia*), were planted at Irymple, in the Mildura irrigation district. The resulting seedlings were heavily culled and the selected plants transferred in 1932 to a special nursery at Merbein. In 1933, they were budded with selected buds of Washington Navel and Valencia Late Oranges.

Six acres of land on a typical virgin Murray Sand ridge on the property of Messrs. Leng Bros., Irymple, were selected as a suitable site for the planting of the trial.

The experimental area is tended by the Leng Bros. by agreement with and under the supervision of the Department. Irrigation water is supplied from an underground pipeline. Records of growth, yield, quality and other details have been kept continuously, except of recent years when detailed recording has not been possible.

Tree Size.

In early stages trees on Citronelle Strong had been the largest but after 7 years those on Sweet Orange

stock had surpassed them. The trees on Sour Orange stock had remained the smallest throughout.

Tree Shapes.

The rootstocks have had characteristic effects on the growth of the trees and can be readily ascertained from the appearance of the top.

Health of the Trees.

In spite of difficulties the trees are mostly well grown and shapely. Sweet Orange stock carried healthy uniform trees and appears to be the most reliable stock for the maintenance of tree health so far.

One out of every four trees on Sour Orange and one out of twelve on Citronelle have begun to decline in health.

Yield of Fruit.

The first-fruit which was allowed to mature on the trees in 1938 showed no important difference in yields. But subsequent harvests have shown that the yield of trees on Sweet Orange stock is better

than that of trees on the other stocks.

Quality of Fruit.

In 1942 samples were taken of Washington Navels and it was found that those on Citronelle stocks would be marketable about a fortnight before Navels on the other stocks. However none of the stocks yielded really palatable fruit until after May 1st. Fruit from trees on both Sweet and Sour Orange stocks were very attractive but the fruit from those on Citronelle stock was sometimes classed as insipid.

The Future.

Up till 1944 all trees in the trial were given identical dressings of fertiliser and the same cover crop treatment. The 2nd part of the experiment will be to apply different fertiliser treatment to different plots and a close check will be kept on the effect of these practices on yield, quality and financial returns.

Conclusion.

Summarising the results of the rootstock trial up to the trees' 10th year, the best stock for both Washington Navel and Valencia Late Oranges on typical Murray Sand soil has been Sweet Orange. It produced large, shapely, uniform trees, carrying a good crop of fruit, while Sour Orange and Citronelle stocks varied with the soil conditions and produced smaller crops.

Trees on Sweet Orange stock produced fruit of good quality, marketable very little later than fruit from trees on Citronelle stock, certainly of better flavour and carrying well into the late season.

No comparison with other stocks at present in the public eye is available in this trial. However, it does suggest that Sweet Orange is a reliable stock for the average planting.

NEW SOUTH WALES.

Kentucky South (8/11/44).

Crops of Apples are light to medium. Delicious and Jonathans are definitely light. Williams and late Pears are heavy. Cherries, mostly late varieties, Florence and Margarets, are showing a good crop. At Kentucky, three miles from here, the growers lost most of their crops of Cherries, Pears and Apples through a severe frost at the end of last month. There were also some fruit lost at Uralla through frosts.

On reports to date the Apple and Pear crops at Uralla, Arding and Armidale are all light.—S. E. Brown (Producers' Co-op. Distributing Society Ltd.).

"My wife is very irritable. The least thing sets her off."

"You're lucky at that. Mine's a self-starter."

TENDERS

The Proprietors of the following Australian Patents:—

113,162 dated 23rd February, 1940, entitled: "Fruit treating apparatus."

Mark Ewald & Henry Skog, are prepared to dispose of the whole or part interest in the patents, or grant licenses on ROYALTY, and invite tenders in respect of same in order to fulfil the full requirements of the trade and the public.

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S.A. News and Notes

S.A. FRUITGROWERS' & MARKET GARDENERS' ASSOCIATION INC.

Minutes of Executive Committee Meeting held 27th Oct., 1944, in the Newmarket Board Room.

Present: Messrs. R. A. Cramond (President), A. O. Petersen, R. B. Pritchard, E. H. Ragless, L. J. Wicks, G. H. Schultz, H. B. Robson, L. B. Pfeiffer, C. Ridley, A. R. Martin, J. Turner, C. L. Winser, W. Nicol, L. G. Pethick, W. J. Bishop, W. G. McLaren, O. Essalbach, E. B. Chamberlain, J. B. Randell, N. T. Hobbs, H. N. Wicks, and A. G. Strickland (Chief Horticulturist).

Apologies: Messrs. C. J. Pitt, J. D. Yeatman, M. Hannaford.

Minutes of September meeting read and confirmed.

Maintenance: The matter of maintenance of properties deferred at last meeting was further debated, and in view of the Federal Government decision on the subject the matter lapsed.

Correspondence: Invitation from S.A. Fruit Marketing Association for members to attend its Annual Meeting was read and received.

Statement of Codling Moth Lure Records from the Department of Agriculture received.

Fruit and Vegetable Hold-Up: Concern was expressed at the Wholesale and Retail ban on certain lines of fruit and vegetables resulting from unsatisfactory selling margins.

Mr. W. J. Bishop moved—"That the Deputy Prices Commissioner be asked to use every endeavour to settle the dispute as early as possible as a continuance will result in heavy losses to growers." Seconded Mr. C. L. Winser.—Carried.

Mr. H. N. Wicks stated that the Apple Section had taken a serious view of the Merchants Association's action in refusing to handle Apples and Pears particularly as an agreement to do so had been entered into with the Apple and Pear Section. The Section's feelings in the matter had been conveyed to the Merchants' Association. He moved—"That the Association add its full support to the action taken by the Apple and Pear Section and the Merchants' Association be advised that this Association views with alarm the breach of agreement entered into at the commencement of the present Apple season." Seconded Mr. W. J. Bishop.—Carried.

Vegetable Section: Mr. A. R. Martin considered that further efforts be made to re-organise the Vegetable Section, and it was resolved that vegetable growers be called together for the purpose of re-forming the Vegetable Section.

Mr. W. J. Bishop moved—"That the Vegetable Committee appointed to present the growers' case in the recent prices dispute be empowered until the Vegetable Section is formed, to take any action considered necessary under the present circumstances.

A.W.U. Log: The Secretary reported that the Compulsory Conference in this matter had been held in Melbourne on 17th October, 1944, and the hearing of the application by the A.W.U. would be held in Adelaide late in November. The Association's legal representative had asked for certain information regarding export quantities, and this was being supplied by the Association.

SECTIONAL AND BRANCH REPORTS.

Society: Mr. W. J. Bishop stated that the Annual Meeting of Shareholders in September had been satisfactory. The Selling Floor was making good progress, and the merchandise section continued to maintain its spectacular progress.

Cherry Section: Mr. W. J. Bishop reported that the Annual General Meeting of the Section would be held at Ashton on 2nd Nov. Early crops would be heavy, and the recent rains should benefit late crops.

Celery Section: Mr. A. R. Martin reported that the Celery season was finished but several matters need urgent attention before the next season commenced. As a matter of interest, a meeting of Cabbage contract growers was held recently when the Federal Vegetable Controller was in attendance. Points worrying growers had been fairly well thrashed out.

Soft Fruits Section: Mr. L. G. Pethick stated that the Section would soon be getting ready for the 1944/45 season. Most crops were showing well.

Apple and Pear Section: Mr. Winser stated that the Committee would be meeting later in the day to discuss the position created by the Fruit and Vegetable hold-up.

Citrus Section: Mr. O. Essalbach reported that the Citrus market had been buoyant for most of the year. Navels were now practically unobtainable.

Marion Branch: Mr. L. Pethick stated that an Almond Co-operative had been formed in the Marion district. Meetings of Cucumber growers had been held recently to consider co-operative marketing of Cucumbers.

Paracombe Branch: Mr. E. B. Chamberlain reported that a medium crop of Apples and Pears were showing in the Paracombe district. No visible damage was showing as the result of frosts and recent hail showers.

Mr. H. N. Wicks stated that the frost damage in the Onkaparinga Valley and some other districts had been exceptionally heavy.

Onkaparinga Potato Branch: Mr. L. B. Pfeiffer reported that the recent rains should ensure normal

plantings. Very little early planting affected by frost.

Finance: The Secretary presented the Financial Statement and accounts for payment.

STORAGE ROT OF POTATOES.

Considerable wastage occurred in early-dug Potatoes last year. A number of factors contributed to this, but not the least important was rotting following injury. Injury during digging or grading paves the way for the entry of organisms causing dry rots (*Fusarium* spp.), or watery rots or "leaks" (*Pythium* spp. and bacteria), since these organisms are always present in the soil. Rot-causing organisms may also follow moth infestation. New Potatoes, and those showing various forms of second growth, are especially subject to injury from bruising.

It is important that no injured or diseased tubers should be bagged with healthy tubers, since they are liable to prove a source of infection if the Potatoes are stored for any length of time.

THE APPLE INDUSTRY IN N.S.W.

By H. Broadfoot and E. C. Whittaker (N.S.W. Dept. of Agric.).

(Continued from p. 8, November "Fruit World.")

Soil Moisture Requirements.

The availability of soil moisture has an important influence on the consistency or otherwise of pome fruit cropping.

The recent consecutive dry seasons have again shown up the great weakness in this respect of several of our Apple districts. It is apparent that in planting these areas the matter of rainfall was insufficiently considered. No matter how rich a soil may be in all available plant nutrients, they are of little use to the tree without adequate moisture, and, furthermore, a fair rainfall is not in itself sufficient to ensure adequate growth and the continual formation of fruit buds, unless such moisture is available to the trees at the right time.

Too many existing areas having an average rainfall of a little over 20 inches experience persistent dry periods when the trees are most in need of moisture, viz., the summer and early autumn; it thus becomes impossible for them to carry and mature a reasonably good crop and at the same time produce a new set of fruit buds for the following season, as well as vigorous shoot growth to provide for replacement of the old and weak spurs in future years.

So far as these areas already planted are concerned, it would seem that

in some of the marginal rainfall districts the only remedy, if such areas are to persist and compete with the better-favoured localities, is to supplement the natural fall slightly during the critical dry growing periods when trees require adequate moisture. Bathurst and Young, for instance, produce excellent Granny Smith Apples in a good season; but quality alone is not sufficient; production per acre must also be satisfactory. The point is that a "good" season in many areas is one in which an adequate rainfall is experienced during the main growing period, therefore it is not inconsistent to expect that if an ordinary season's rainfall could be supplemented to some extent, the results would justify the expense.

In some of the marginal rainfall areas now planted to Apples, the conservation of adequate water supplies for supplementary irrigation for individual growers or groups of growers is worthy of serious consideration as a post-war project—quite apart from any large-scale irrigation schemes. The fact that districts like Young and Bathurst, in addition to producing fine quality Granny Smith Apples, also produce excellent stone fruit, makes the suggestion of a supplementary water scheme all the more worthy of consideration.

It is very frequently the case that some growers do not make the best use of available soil moisture. They become careless at times in regard to cultural work, weeds are allowed to grow during late spring and summer months and the soil is depleted of moisture when the trees are most in need of it.

Deficiency of Plant Nutrients.

It would seem altogether illogical to expect a block of Apple trees to go on indefinitely taking out the nutrient elements of the soil, without making some effort to replace them, and yet there are many who still apparently imagine that this can be done.

So far as this State is concerned, by far the most common deficiency of the major elements met with in Apple orchards is undoubtedly that of nitrogen.

In its virgin state probably most of the land planted with Apple trees contained a more or less adequate supply of nitrogen, but the leaching effects of time, cropping and continued cultivation must be countered to avoid starvation levels of nitrogen at which tree health and productivity will be detrimentally affected.

Fortunately the colour of the leaves affords a reasonably reliable way of

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determining whether or not the trees are suffering from nitrogen starvation. When the foliage has a light green or yellowish appearance in early Summer it is reasonable to suppose that the nitrogen supply is not sufficient for the needs of the tree. Other nitrogen deficiency symptoms are poor growth and early defoliation. When adequate supplies of nitrogen are available the leaves have a good dark green appearance, growth is satisfactory and defoliation is normal.

It is possible, however, for a tree to obtain an excess of nitrogen which at times is likely to cause the fruit to fall early, and to adversely affect its keeping qualities. This applies particularly to varieties such as Jonathan, McIntosh and Delicious. When there is an excess of nitrogen

the leaves give no indication of the fact during the early part of the growing season, the colour being the same as when just sufficient nitrogen is available, but towards the end of the season the green colour of the leaves is far more pronounced. If trees show symptoms of getting too much nitrogen the remedy is simple and cheap—apply less nitrogen.

Boron and zinc are the only two so-called minor elements that have in past years caused serious losses in Apple production in this State. In the Kentucky district a deficiency of boron in orchard soils was responsible for so much "corky" fruit that the annual loss of Apples for a considerable number of years ran into many thousands of cases.

A deficiency of zinc in the soil in parts of the M.I.A. was until quite

recently responsible for a very rapid decline in tree health, and consequently many Granny Smith Apple trees (the chief Apple grown) failed to carry any fruit, while the yield of others was considerably reduced.

It is not intended to discuss in detail the plant food requirements of

Apples, but merely to emphasise the fact that it is essential, so far as satisfactory cropping is concerned, to have good tree health and that this cannot be obtained in nitrogen-depleted soils or soils in which other essential plant foods are lacking. — N.S.W. Agric. Gazette.

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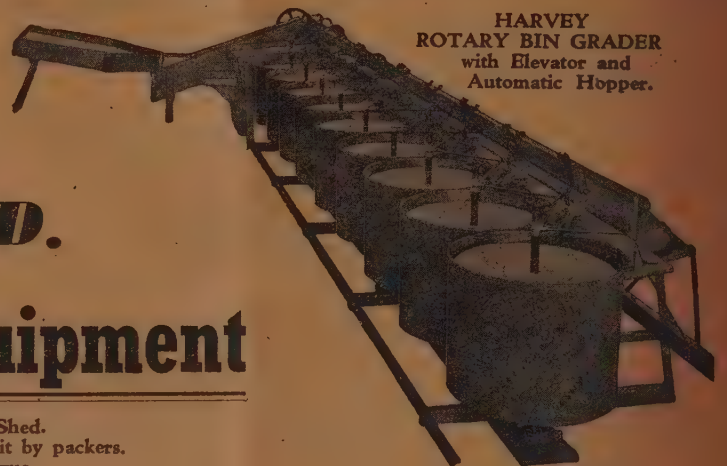
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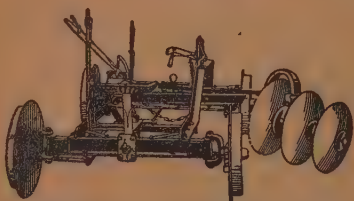
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Victorian Crop Conditions

Apple Crop Light, Sultanas Below Normal.

Water Shortage and Dust Storms.

THE GROWTH OF FRUIT TREES in all districts has been satisfactory, states the Dept. of Agric. Useful rains have fallen in southern districts and irrigation has been in progress in the north. Although present prospects for Peaches, Pears and Apricots are good, the production of these fruits in the northern irrigation areas is likely to be seriously affected by the severe shortage of water.

The Apple crop will be considerably lighter than usual.

Plum crops are also reported to be below normal.

The Spring brood of codling moths has been particularly active, and growers have been making strenuous efforts by spraying to control this pest. The use of the combination white oil — lead arsenate spray has been favoured in all districts. The banding of tree trunks to trap grubs is also being adopted.

Increased activity of the Oriental Peach moth has been reported in the Goulburn Valley.

Cherries and Berries.

Picking of Cherries continued, and good quality fruit was bringing high prices in the market. The setting of Loganberries, Lawtonberries and Raspberries is satisfactory, and some Loganberries were being picked at

the end of the month. High prices will be received for berry fruit picked either for factories or market. An increase in virus disease has affected the productivity of Strawberry plantings.

Citrus Crops.

Lemon trees in southern orchards have made a good recovery from frost damage and much new growth is now visible, some of which will require thinning out.

Large consignments of Valencia Oranges have been forwarded from northern citrus areas. After a dry Winter and severe frosts, which have been followed recently by windstorms with resultant tree damage, it is expected that the coming crop of citrus fruits will be considerably below normal.

Vineyard Prospects.

Preliminary estimates for the vine fruit crop in the Swan Hill area indicate that Sultanas will be below normal, Currants should be heavy and Gordos and Walthams should also be fairly normal. A few growers in the Mildura and Swan Hill districts have suffered losses due to severe wind storms and frost damage. Many growers have adopted the practice of bunch thinning with the object of improving the quality of Grapes for market purposes. By constantly spraying with arsenate of lead, growers have been able to control the infestation of light brown Apple moth on vines.

Vegetables.

Dry conditions and severe wind and dust storms have adversely affected the production of vegetable and Tomato crops in the Murray Valley. Rutherglen bug is attacking Carrot seed crops in these areas.

The major sowings of Carrot crops in south Gippsland have been made, and germination has been satisfactory except on 20 per cent. of the area, where conditions were dry. Red Beet crops are growing satisfactorily.

Large quantities of Cabbages have been treated at the Bairnsdale dehydrator. Crops are heavy and of good quality. Some Green Peas and the first of the season's green Beans have been forwarded to Melbourne from this area. Heavy supplies of Green Peas are being forwarded to Melbourne from the Bellarine Peninsula, where an excellent season has been experienced.

ORCHARDISTS' AND FRUIT COOL STORES' ASSOCIATION.

There was a large attendance of delegates at the meeting of the Orchardists' and Fruit Cool Stores' Association held on November 28, at the C.T.A., Melbourne.

Brig. the Hon. G. H. Knox, M.L.A., forwarded a letter received by him from the Minister for Agriculture (Hon. N. A. Martin), stating that in response to the growers' deputation it had been decided to establish a Horticultural Research Station in Southern Victoria, and that £5,000 had been placed on the estimates to cover the cost of the land: a commencement would be made as early as practicable. The Opportunity Club wrote expressing thanks to the members of the Association who had donated six cases of Apples per week for the last six months to assist in providing the Oslo Lunch for under privileged children.

The Prices Branch, Canberra, wrote requesting a conference to discuss the fixing of prices of Apples and Pears for the coming season. It was also reported that a meeting of the various fruitgrowers' organisations which were concerned in the appointment of the Committee which negotiated with the Prices Branch in the fixing of last season's prices had been called for December 12, when it was expected that the policy of the growers with regard to the fixing of prices would be decided.

The report was received and a discussion on various aspects of the fixation of prices for fruit was held.

Mr. F. C. Pyke, Secretary of the Committee which is joined in the case against the Australian Apple and Pear Marketing Board for increased compensation gave an outline of the procedure in court up to the time when an adjournment was granted. He anticipated that the hearing would not be continued until May. It had been made quite plain that whichever side lost the case would appeal to the Full High Court, so that if the final decision is favourable to the growers it would be at least twelve months before compensation could be paid.

Mr. J. M. Ward, Superintendent of Horticulture, gave an outline of the work proposed at the Horticultural Research Station when established. The principal matters which Mr. Ward said would be dealt with are—(1) Root stocks and fertilizers for Apples and Pears; (2) Varieties and general culture of berry fruits; (3) Varieties and general culture of minor tree fruits; (4) Variety trials for Peaches, Apricots and Plums; (5) Nursery work; (6) Varieties and general culture of vegetables.



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Dropped fruit is virtually useless, but picked fruit retains full flavour, colour and value.

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Mr. Ward also advised that it was intended to establish an experimental research station for modern experiments in cool and gas storage; ripening facilities would be installed.

The Secretary (Mr. W. A. Stewart), reported that negotiations were proceeding with the Prices Commissioner for an increase in the pegged rates for cool storage and it was hoped that an announcement of an increase would be made shortly.

TOPPING.

General (after reviewing troops): What's the idea of parading all the big men in front of the smaller men?

Captain: It's the Sergeant-Major's fault, sir—He used to run a fruit business.

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M-T-10-18

Goulburn Valley News and Notes

(By Our Correspondent.)

HOT DRY CONDITIONS still prevail in the Goulburn Valley, and great anxiety is felt by growers with the restricted water supply for irrigation, as each man's water right has been reduced to 95 per cent. for the season, and at present there is no available excess water in sight. In normal seasons all growers use excess water from about the middle February till the end of the season, and it is certain that the later varieties of canning Peaches will suffer unless a break in the weather occurs soon.

The position is so acute, that some of the large growers have been compelled to buy water from dry farmers at the enormous price of £4/10/- per acre foot against the Commission charges of 6/- per acre foot.

The shortage of labour for picking is again causing grave concern: men seem scarcer than ever this year, and, coupled with this is the fact that the men now only work 44 hours per week, thus, with depleted staffs it is impossible to cope with the necessary work, and growers have to resort to overtime pay for employees who still work the 48 hours per week.

This fact, coupled with the steep rise in the cost of production means that we will have to get a higher price for our canning fruit to cover costs of production.

The fruit crop generally throughout the Valley is satisfactory, though not as heavy as last year: W.B.C. Pears are not nearly so heavy, but

with the lighter crop there should be better quality.

Apricots are fair to medium—some varieties rather patchy. The fruit is clean and free from shot hole.

Canning Peaches on the whole are carrying a good crop. Plums are light.

Much damage was done in late October by a severe hail storm which struck patches of orchard country here and there, and some rather heavy claims have been lodged with the insurance company concerned.

Early Apricots of the Newcastle and Oullins varieties are already being consigned to the metropolitan markets where at good prices also Peaches of the Mayflower variety in small quantities are going forward.

Mr. W. Young, President of the Northern Victoria Fruit Growers' Association, and his executive committee, including Mr. S. P. Cornish (secretary) and Mr. F. C. Cooper (of Lancaster), and Mr. N. W. Fairless (of Shepparton), have just returned from a Canning Fruit Growers' Conference with the Leeton Growers in the Murrumbidgee Areas (N.S.W.), where they met to discuss prices for canning fruits for the coming season.

It is understood a further conference will be held in Melbourne early in December, with the Cannerymen, the Sugar Concession Committee, and also growers' representatives, when matters connected with fruit prices will be finalised.



Red Cross supplies patients in hospital and convalescent depots with cigarettes or tobacco each week. These men in a tented ward in New Guinea are receiving their weekly issue from the Red Cross Representative.

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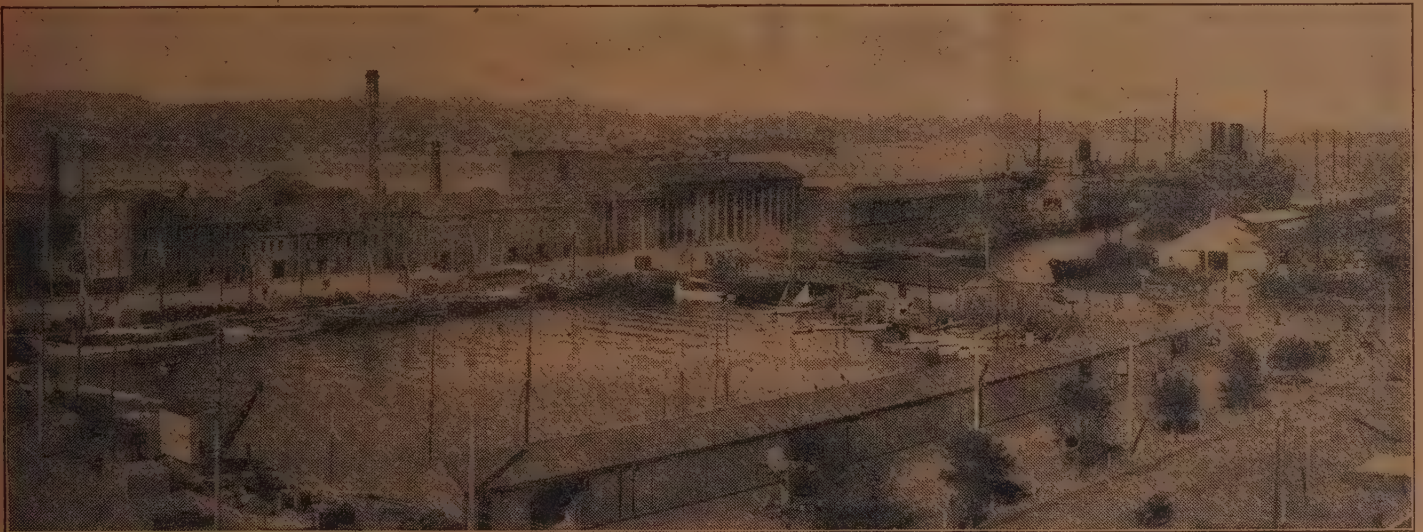
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N.S.W. Crops.

Our delegates bring back news that there will only be a light crop of fruit in the Leeton irrigation area. More than half the Apricot crops have been destroyed by severe frosts in the early Spring, while Peaches are expected not to have more than a 75 per cent. crop; W.B.C. Pears are not largely grown. This, coupled with the damage at Orange, N.S.W., and also the severe damage in parts of South Australia, will considerably reduce the coming fruit crop in Australia.

.. ..

Cases are also another urgent problem here, and supplies are almost unobtainable; new hardwood bushel cases are costing 2/- each; this, coupled with all the other overhead charges, is it any wonder that consumers have to pay such high prices for their fruit?

.. ..

The new cool store of the Ardmona Fruit Products Co-operative Ltd., Mooroopna, is now almost completed, and a very fine job has been made of it. It is to be fitted with the most modern cooling system, and with the addition of the large new packing rooms, which are to be used for the handling of the late Josephine and Packhams Pears, will prove to be a wonderful asset to the growers and the canneries.

.. ..

Staffs for Canneries.

Officials Anticipate Difficulties.

Manpower needs for canneries are expected to be more difficult this year than last, owing to the increased number of women employed in dehydration and other food factories since January of last year.

Labour to meet big 1945 orders from the Services will need to be drawn almost exclusively from country areas.

This is the conclusion reached by Food Control and Manpower officials after a meeting of all Victorian local National Service Officers held in Melbourne.

According to Food Control, almost 64,000 people are working in dehydration and other food factories, of this total, 21,000 are woman workers.

This will need to be increased to 24,000 women workers once the canning season in the Goulburn Valley commences.

Over 4,000 people are employed at present in the canning industry in Victoria. This will reach 8,000 during the canning months of January-February, March and April. The majority of this increased volume of labour will be women workers.

TOMATO VARIETIES.

Investigations in Goulburn Valley.

INVESTIGATIONS into Tomato varieties have been conducted by the Victorian Department of Agriculture.

Messrs. C. E. Cole, B.Agr.Sc., R. S. Harper, B.Agr.Sc., and R. A. Mullett, of the Victorian Department of Agriculture, have described experiments that show that the Tomato varieties—Tatura Dwarf Globe and Tatinter—provide a better return to the Goulburn Valley grower than the standard variety, Burwood Wonder. This is due to the fact that these varieties produce a higher percentage of canning quality Tomatoes. Although Burwood Wonder, Fiedler's Long Keeping Dwarf and Watts' Long Keeping Dwarf yield almost as well, the percentage of canning quality

fruit from these latter three varieties is much lower.

It was found that under the climatic conditions of the Goulburn Valley the variety Queen is not suited to the district.

"TATURA DWARF GLOBE" TOMATO.

The history of the Tatura Dwarf Globe Tomato was recently described by Mr. F. A. Maher, B.Agr.Sc., Victorian Department of Agriculture, as follows:—

This variety has been developed from a single plant selection made by Mr. D. Koop of Quantong, Victoria, in 1928 or thereabouts, in an area planted to the variety "South Australian Dwarf." The first plant selected by Mr. Koop was undoubtedly a hybrid, as it was not until five seasons after the first selection was made that a completely uniform line of plants was obtainable from any of his single plant progeny trials. After growing this variety for several seasons Mr. Koop eventually discarded it because of its tendency to run back to small fruit. Seed of this variety was sent by the local Orchard Supervisor to a Pomonal grower, and it was from this grower that seed was first obtained for trial by the Horticultural Division.

The variety was established at the Horticultural Research Station,

Tatura, with the idea of testing its suitability for the main Tomato producing areas of Northern Victoria, and if possible improving its fruit size.

The results achieved by rigorous selection for improved fruit type have placed Tatura Dwarf Globe well ahead of the existing dwarf varieties as a canning and market type.

APPLE AND PEAR ACQUISITION.

High Court Case.

THE TEST CASE is part heard in which growers are suing the Commonwealth and the Australian Apple and Pear Marketing Board for higher compensation for fruit compulsorily acquired.

The plaintiffs named were Edwin Inglis Lawford and Edward Herman Zerbe, of Doncaster, Victoria. As Mr. Lawford died since the action was originally commenced his name has now been struck out and this is now known as the "Zerbe" case.

The plaintiff claims the declaration of a fair and reasonable market

value, or alternatively that the sum of £20,333 is fair compensation for the fruit acquired and an order for payment of £14,128, representing the difference between this and the £6,205 received.

In reality hundreds of thousands of pounds are involved as the Zerbe case is a test one affecting other growers in the seasons named in the action—1940, 1941 and 1942.

The case is being heard in the High Court of Australia before Mr. Justice McTiernan.

Counsel for the plaintiff referred to a prior judgment in the Full High Court in which similar issues had been raised.

The defendant's case was that full value for the fruit had been paid.

The case for the plaintiff had been closed and the evidence of the defendant was well advanced when Counsel for the plaintiff sought from the Court an adjournment in order to make further examinations of marketing records. The adjournment, though opposed, was granted.

Mr. R. G. Menzies, K.C., with Dr. E. G. Coppel (instructed by Malleison, Stewart and Co.) appeared for the plaintiff, and Mr. W. K. Fullagar, K.C., with Mr. Arthur Dean, K.C., and Mr. J. B. Tait (by the Commonwealth Crown Solicitor), for the defendant.

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CLINGSPRAY is a synthetic vegetable hormone in liquid form, containing Naphthalene Acetic Acid, which gave excellent results when tested by officers of the New South Wales Department of Agriculture throughout the 1941-42, 1942-43 seasons. (See New South Wales "Agricultural Gazette," January, 1944).

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S.A. FRUITGROWERS' & MARKET GARDENERS' ASSN. INC.**November Meeting.**

The Executive Committee of the above Association met in the New-market Board Room, Adelaide, at 10.30 a.m. on Friday, 24th November, 1944.

The President owing to pressure of business was unable to attend, and the Vice-President (Mr. A. R. Martin) occupied the chair.

Members present:—Messrs. L. B. Pfeiffer, C. H. Ragless, W. H. Ind, C. Ridley, L. J. Wicks, J. B. Randall, W. Nicol, O. Essalbach, G. H. Schultz, H. B. Robson, G. Jennings, C. J. Pitt, J. Turner, N. T. Hobbs, C. L. Winsor, M. G. Hannaford, W. J. Bishop, and The Chief Horticulturist (Mr. A. G. Strickland).

Apologies were received from the President (Mr. R. A. Cramond), Messrs. W. Wye, H. N. Wicks, C. Stanford and G. B. Ragless.

Resolved that the correspondence as read be received.

Invalid Club: Resolved members of the Association be canvassed for donations of fruit to this appeal.

Federal Potato Advisory Committee: Mr. C. J. Pitt (S.A. Representative on the Committee) reported on a meeting held in Melbourne in September last. The chief matters of interest to S.A. growers were consideration of Post War Reconstruction of the Potato Industry, and the fact the acceptance of Potatoes at loading stations was available to growers in New South Wales and Victoria. Mr. Pitt moved:—"That the Australian Potato Committee having accepted in principle, the inspection and acceptance of Potatoes at country centres, the State Department of Agriculture be urged to take the necessary steps to bring about a uniform policy of acceptance and inspection at South Australian loading points." The motion which was seconded by Mr. L. B. Pfeiffer was carried.

December Meeting: Resolved that, unless in case of emergency, no meeting of the Executive Committee be held in December.

Sectional and Branch Reports.

Fruitgrowers' Society: Mr. W. J. Bishop reported that at last headway was being made in the building reconstruction plan.

Cherry Section: Mr. W. J. Bishop reported that although recent rains had caused damage to early Cherry crops, mid and late season crops would benefit. An excellent market and factory demand prevailed. The season this year was early.

Apple and Pear Section: Mr. C. L. Winsor reported that the Apple position was a little more satisfactory. There was hope of clearing stocks on hand. Good quality fruit was selling freely.

Citrus Section: Mr. O. Essalbach reported that Navelis had finished, and Lemons were in short supply.

Soft Fruit Section: It was reported that the Annual Meeting of the Section was held 17th November, when Mr. B. C. Pitman was elected Chairman. All stone fruits were heavy with the exception of main crop Apricots.

Celery Section: Mr. A. R. Martin reported that the restriction on acreage of Celery imposed in 1942 had now been lifted.

Cudlee Creek Branch: Mr. M. G. Hannaford reported that the Cudlee Creek Store was in the happy position of being able to clear stocks of Apples before Christmas.

Marion Branch: The Secretary reported that the Annual Social of the Branch would be held in the Sturt Hall, Marion, on Wednesday, 13th December, at 8 p.m. A cordial welcome to attend was extended to members of the Association Executive Committee.

Onkaparinga Branch: Mr. L. B. Pfeiffer reported that the rains had been beneficial to planting. Mr. A.

G. Strickland stated that plantings in all districts was progressing very well. Present acreage figure stood at 12,000 acres. The State target was 15,000 acres. The harvesting problem this season particularly in the South East, promised to be acute.

Finance: The Secretary submitted the financial statement and accounts for payment.

Senator E. W. Mattner: Resolved a letter of congratulations be sent to Senator E. W. Mattner on his appointment to the Senate.

In closing the meeting the Chairman extended to all the Season's Compliments.

QUEENSLAND VEGETABLE CROPS.**Substantial Increases.**

The Government Statistician states that an increase of 20,461 acres, or 40 per cent. in plantings of vegetables for human consumption in Queensland, is expected for the six months to the end of December, 1944, compared with the corresponding period of last year.

The total area to be under vegetables for the current six months is shown to be 71,888 acres.

Increases of 40 per cent. are expected for Navy Beans, Beetroot, Onions, Lettuce, Potatoes, Cauliflowers, Pumpkins and Swede Turnips.

In addition there were for the last six months of 1944 proposed plantings of 31,892 acres of various types of vegetables for animal fodder compared with 10,676 acres for the same period of 1943.



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Market Notes and Prices

NEW SOUTH WALES.

Sydney (29/11/44).

The State Marketing Bureau reports as follows:—Small consignments of Granny Smith, Delicious and Democrat Apples were again available from inland cool stores. Both Granny Smiths and Delicious were keenly sought and practically all lines realised the maximum rate of 27/- per bushel. Some Democrats also sold at the ceiling level, but the range was from 18/- to 27/-. Interstate supplies declined appreciably. Jonathans were obtainable early in the period, but the marketing of this variety has finished. Stocks of Western Australian Granny Smiths also were exhausted and the only Tasmanian variety on offer was Democrat. Some Victorian Rome Beauties, Yates, Statesman, Granny Smiths and Democrats were on offer and the maximum of 27/- was obtained for best packs of Granny Smith, Rome Beauty and Yates. Only an occasional case of cooking Apples from coastal orchards was forward.

Consignments of Victorian Pears were light and comprised Winter Cole, Josephine and Winter Nelis. Good quality fruit sold at the ceiling level of 28/- per bushel.

Current prices were:—Apples, N.S.W.—Granny Smith 27/-, Delicious 27/- (nominal), Democrat 18/- to 27/-; Interstate—Rome Beauty 20/- to 27/-, Yates 15/- to 27/-, very small sizes from 8/-, Granny Smith 15/- to 27/-; Victorian—Democrat 14/- to 25/-; Tasmanian—Democrat 11/- to 13/-, repacked to 15/-; Pears: Victorian—Winter

Cole, Winter Nelis and Josephine 28/-, very small and over-ripe lines lower (nominal); Oranges: Valencia—Coastal: Standard—Counts 72 to 100 14/- to 19/6, 113 to 180 21/-, other 8/- to 18/-, few higher (plain grades at lower levels); Lemons: Coastal 10/- to 16/-, few 18/- per bushel case. Peaches: 8/- to 18/-, occasional specials higher, small and inferior from 5/-; Apricots: 10/- to 25/-, few specials higher; inferior lower; Plums: 5/- to 16/-, few higher, factory lines lower; Passionfruit: 25/- to 50/- (mainly nominal); Mangoes: Apple 20/- to 25/- per half-case. Gooseberries: Local 9/- to 14/-; Cherries: 5/- to 15/-, occasional specials higher, per quarter-case. Bananas: 3d. to 6d., specials 7d. per lb.; inferior lower (weight 80 to 96 lb. per case). Papaws: 20/- to 40/- (nominal); Pineapples: 25/- (nominal) per tropical case.

Vegetables.

Current quotations were:—Peas 23/4, Beans 20/-, few inferior lower per bushel. Cabbages 5/- to 20/-, few specials to 24/-; Marrows 6/- to 16/- per dozen. Lettuce 3/- to 7/- per case. Carrots (bagged) 25/- per cwt. Parsnips 4/- to 7/- per dozen bunches; to 28/- (mainly nominal) cwt. Rhubarb 5/- to 8/-. Spinach 7/- to 10/-. Celery (local) 4/- to 12/-. Eschalots 4/- to 5/-. Asparagus 18/- to 36/-. Mint 3/-. Parsley 12/- to 18/-. Beetroot 1/6 to 4/- per dozen bunches. Tomatoes, local, choice field 20/-; glasshouse, choice 20/-, other grades from 10/-, inferior lower; North Coast 7/- to 20/-, inferior lower, per half-case. Potatoes, 1st grade 7/10½. Onions

(brown and white) 23/6. Pumpkins 22/6 per cwt. Cucumbers (Apple) 12/- to 18/-, inferior lower (Green) 10/- to 16/-, few higher, per half-case. Mushrooms (cultivated) 5/- per lb.

VICTORIA.

Melbourne (2/12/44).

Vegetables: Asparagus, 5/- to 10/- for 100; Beans, Broad, 15/- to 24/- 50 lb.; do., Kidney, 10d. to 1/1 lb. (max.); Beetroot, 9d. to 1/- doz. max. 17/- cwt.; Beet, Silver, 3/6 to 5/- doz.; Cabbages, 6/- to 12/- doz.; Carrots, 3/- to 4/6 doz. bunches, max. 21/- cwt. without tops, 16/- cwt. with tops; Cauliflowers, 6/- to 16/- doz.; Celery, 6/- to 8/- doz.; Cucumbers, 4/- to 50/- case, few to 55/-; Garlic, 1/6 to 1/9 lb.; Horseradish, 1/- to 1/3 bundle; Lettuce, 4/- to 8/- case, few to 10/-; Mint, 2/- to 3/- doz. bunches; Onions, green, 2/- to 3/- doz. bunches; Silver, 3/- to 4/- doz. bunches; Parsley, 2/- to 3/- doz. bunches; Parsnips, 3/- to 4/6 doz. bunches, max. 23/- cwt. without tops, 18/- with tops; Peas, 30/- to 40/- 50 lb. (max.); Potatoes, 10/- to 10/6 bag; Pumpkins, 18/- to 36/- doz., to 25/6 cwt. (max.); Radish, 2/- to 2/6 doz. bunches; Rhubarb, 3/- to 4/- doz. bunches; Spinach, 5/- to 6/- doz. bunches; Tomatoes, 20/- to 40/- case; do., S.A., 18/- to 22/- half-case; Turnips, 3/- to 5/- doz. bunches; do., Swede, 10/- to 15/- bag; do., 5/- to 8/- bunch; Vegetable Marrows, 10/- to 18/- doz. Fruit (bushel case, unless stated): Apples, eating, 14/- to 22/-, few Delicious to 25/-; do., cooking, 14/- to 20/-, few Granny Smith to 23/-; Apricots, 15/- to 30/-, few to 34/-; Cherries, 6d. to 9d. lb.; Currants, red, 9/- to 10/- doz. pun; Loganberries,

9/- to 10/- doz. punnets; Oranges, Navel, 16/- to 18/6 (max.); Valencia, 18/6 to 21/6 (max.); Lemons, 16/- to 20/- (max.); Loquats, 12/- to 20/-, few to 22/-; Gooseberries, green, 4/- to 5/6 doz. lb.; Raspberries, 1/- to 1/3 punnet; Strawberries, 1/- to 2/- punnet, few to 2/6; Peaches, 10/- to 20/-, few to 23/-; Pears, dessert, Packham, 25/- to 28/- (max.); Pears, culinary, 16/- to 22/-; Papaws, 22/- to 30/- double case; Plums, 8/- to 12/- half-case; Cherry Plums, 4/- to 7/6 case; Bananas, green, 5d. to 6d. lb.; ripe, 8/- to 14/- double case; Pineapples, 22/- to 27/6 double case, 5½d. lb. (max.); Passionfruit, 50/- to 60/- half-case.

MARKETING VEGETABLES IN MELBOURNE.

Problems affecting the marketing in Melbourne of vegetables in short supply were largely resolved at a conference of all interested during November.

Owing to a difficult growing season there was a shortage of Onions, Carrots, Parsnips, Beetroot, etc. It would appear that wholesale and retail prices were fixed at last season's rates when crops were more abundant.

As complaints were made that some growers were selling limited stocks of vegetables at prices above the fixed rate (the demand being greater than the supply), a conference was held attended by representatives of the Vegetable Growers' Association, Retail Fruiterers' Association, Victorian Market Traders' Council, Wholesale Fruit Merchants' Association, Melbourne City Council, and the Prices Branch.

Retail greengrocers pointed out that sections of the public were clamoring for the vegetables, and that some growers were "black marketing" by demanding more than ceiling prices, yet the retailer was punishable if he sold at a higher rate than the fixed retail price. A typical instance was given where 8/- per dozen was paid for Parsnips, whereas the wholesale ceiling price was 4/6 per dozen and the retail price 6d. per bunch.

Vegetable growers' representatives said that official mistakes had been made which should be corrected. They stated the trouble originated last season when the Prices Commissioner at Canberra had ignored the requests by growers for higher ceiling prices on certain lines. As a result, growers had gone in for other lines, which was responsible for the present shortage. Many growers, however, even in times of short supply, had abided by the Prices Commissioner's ruling: there were others, however, who had yielded to the offers of higher prices by greengrocers. The Vegetable Growers' Association, whilst firmly against "black marketing," was seeking adequate returns for growers.

Retailers pointed out the necessity for prices to be related to stocks.

The Prices Branch representative said that the correct procedure would have been made for growers to apply for a variation in the ceiling schedules for this season.

The City Council stated that growers offending against the regulations would risk forfeiting their stands.

It is reported that the problem has been largely ironed out, especially as supplies are becoming greater.

The City Council had notices printed and displayed prominently warning offenders of the risks attendant on non-compliance with regulations.



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MORE INTERESTING FACTS ON QUICK FREEZING.

Mr. E. G. Hall, Fruit Research Officer, N.S.W. Department of Agriculture, has given more interesting data on the actual processing of foods for quick freezing as it has already been done in America.

The modern method of quick freezing involves the rapid freezing in two hours or less, and subsequent storage at temperatures approximating 40 deg. Fahr. below freezing point, either before or after packing footstuffs in small containers.

This method has been used extensively in America, and has proved invaluable to her during war years, as it has allowed vast quantities of fruit and vegetables to be sent to the fighting forces with little result and loss of palatability and nutritive value. It has also enabled a very large reserve of highly nutritious food to be built up in the country.

The total U.S.A. pack of quick frozen foods in 1943, including fruit, vegetables, sea foods, poultry and meat, exceeded 1,000 million pounds in quantity.

In 1933 some 70 million pounds of fruit, and 2 million pounds of vegetables were preserved by freezing; in 1943 the total pack of frozen fruit was 209 million pounds, and the total pack of frozen vegetables was 231 million pounds.

Fruits, as a class, are the most difficult to preserve without causing radical changes in appearance, flavour, etc. In general, the fruit chosen for quick freezing should be riper than for canning, and should be picked in a prime eating condition. Uniformity of maturity is also of considerable importance.

Fruit pulps and juices are frozen to a considerable extent, and practically all varieties can be frozen satisfactorily in this form.

Vegetables can be quick frozen most satisfactorily. As a general rule, vegetables which are commonly cooked before being eaten are the most satisfactory. For the best results the vegetables must be harvested right at the time of highest quality, and frozen as rapidly as possible after harvesting to keep post harvesting changes at a minimum.

In general, the main key to the success of quick freezing is quality control, as popular acceptance of quick frozen foods depends largely on the presentation of a product of superior quality, and care is essential at all stages from the harvesting of the product to the finished article.

SYDNEY COOL STORES.

Temporary Store to be Erected in Municipal Markets.

A contract has been let for the construction of a temporary cool store in the Municipal Markets, Sydney, and work is due to commence about November 6th.

A summarised paragraph in October "Fruit World" announced work then in progress, with possible completion by the end of the year. The paragraph should have read that plans were in progress.

The hope is now expressed in N.S.W. marketing circles that the work will be completed in three or four months time, but it is recognised that delays may occur.

Pig Notes

PREVENTION OF WORM INFESTATION IN PIGS.

Pigs that are kept in good condition by adequate feeding of a balanced diet, rich in minerals, will have their natural disease resistance at a maximum, and will more readily throw off infestations with internal parasites. Once a young growing pig is checked by faulty feeding or management, the way is paved for any worm infestation to complete the upset of the animal's health and produce serious disease symptoms.

Development of internal parasites in pigs is always favoured by wet, muddy, unhygienic conditions. Pigs should not, therefore, be allowed access to streams, mud wallows and bogs, but should be kept in dry yards, provided where necessary with concrete wallows so arranged that cleansing is an easy routine duty.

Overcrowding of pigs on pasture or crop paddocks should be rigidly avoided, as the larger number of animals per unit area the heavier will be the worm infestation, and the more rapidly will the parasites spread.

The prevention and treatment of worm infestation in pigs is fully discussed in a leaflet obtainable free on application to the Division of Information and Extension Services, Department of Agriculture, Box 36A, G.P.O., Sydney.

Poultry Notes

CHANGEABLE WEATHER AFFECTS CHICKENS.

The wide variations in temperature usually experienced during October often cause trouble in the rearing of chickens. This is mainly due to the fact that, with the advent of warm spring weather, many poultry farmers become rather careless and neglect to keep up the brooder temperatures, especially during the night, or perhaps in order to relieve some of the brooder work, they move the chickens out of the brooders a week or two earlier than they should, hoping that the warm weather will continue. Should a cold snap then occur losses result or the chickens receive a setback. In other cases, where the brooder accommodation is overtaxed, sufficient ventilation may not be provided during warm evenings, thus causing stuffy and unhealthy conditions in the brooders, particularly where the chickens have no means of escape to a cooler zone.

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Home Notes

One of a woman's greatest pleasures is to build up her home gradually and make it a pleasant and enchanting place for her husband and family. They above all people appreciate her individual initiative in adding little touches to their home.

In the Home.

In days of rationing and short supply the housewife's task is twice as hard and she must work harder to achieve her ends. To lessen the burden of laundering and ironing table clothes it is a good idea to improvise with small individual table mats for each member of the family. These can easily be made by machining together squares of brightly coloured printed scraps and giving a very gay patch work effect.

In Your Sewing Basket.

Then perhaps the men in the house are finding difficulty in making their coupons last. Here are a few hints on how to smarten up old slacks and save eight coupons! With a little determination and some old pieces of matching flannel those hard-worked flannels can still be made to last many a long day.

This is the tailor's way with frayed ends:—Unpick hem or turn-up. Take in small fold to enclose frayed

edge. Machine on wrong side, or side-stitch by hand on the right side. Press. Rehem, refold, turn up and press again.

The tailor's patch for the seat—almost invisible:—Unpick centre-back seam to crutch. Cut two patches to cover worn parts, both the same size and shape. Working on the right side tack each patch to its own seam edge. Then tack patches all round with small turnings. Stitch with wool or machine. Then turn inside out and darn parts lightly with the new seat. Press.

Repocketing:—Use pockets from discarded trousers, or cuttings from old suits or strong shirt material. Unpick the pockets—cut a pattern, allowing for turnings. Machine wrong side—turn, machine again. Sew in strongly, or cut away the old pocket altogether, leaving enough material to attach the new one. Fix with two rows of machining.

PRESERVING EGGS.

A simple mixture for preserving eggs may be made with one teaspoon of sulphur to five tablespoons of vaseline. Boracid acid may be substituted for the sulphur. A thin layer is smoothed over each egg, and they then can be stored in a wire basket or container, which will allow the air to circulate around them.

SPECIAL NOTICE TO FRUITGROWERS

In response to numerous requests from growers for information as to who are members of the

CHAMBER OF FRUIT & VEGETABLE INDUSTRIES,

the following list is given. All are members of the above Association, and are registered firms carrying on business in the WHOLESALE FRUIT MARKET, MELBOURNE. (All Members under Fidelity Bond)

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Science in Horticulture

Potash in Relation to Citrus Nutrition.

The effect of potash deficiency and excess of potash on citrus was studied in automatically operated sand cultures at the Citrus Experiment Station, Riverside, California.

Potassium deficiency in its early stage is best determined by leaf analysis, its symptoms being difficult to distinguish from other conditions of malnutrition. In the more acute stage there is evidence of leaf twisting and crinkling and of the emergence of weak, spindly new lateral shoots. The symptoms occurred both at high and low levels of other nutrients.

Potassium deficient plants contained increased amounts of calcium, magnesium, sodium, nitrogen, whilst phosphorus, sulphur, chloride did not accumulate. Such plants suffered

from boron excess and to a lesser extent from leaf burn caused by sodium excess. High concentrations of sodium delayed the appearance of potassium deficiency symptoms, probably because of the first mentioned metal's antagonistic effect on calcium and magnesium.

Experiments in a Neglected Orchard.

A neglected Apple orchard of 404 trees at Huapai, Auckland, N.Z., was taken over by the Plant Diseases Division in 1937 to demonstrate the efficacy of modern methods in disease control and to ascertain the possibility of bringing such an orchard back into economic production. The soil was gum-land clay with an impenetrable iron pan at 15 to 20 inches depth. Drainage was poor, the trees unpruned, diseased and starving.

A heavy pruning the first year reduced the leaders to not more than

six, with shortened laterals and spurs thinned or removed. Heavy new growth resulted. The second year a lighter pruning removed half the new growth, the remainder being left untouched to develop fruit buds. In the third and last pruning the shoots which had developed fruit buds were shortened, fruit spurs thinned and a proportion of new wood left to form fruiting wood.

Of the eight varieties in the orchard only, Gravenstein by reason of "strangulation" failed to make more than temporary improvement, though Statesman and Granny Smith also proved difficult. Annual cultivation in Summer was followed by a blue Lupin cover in Autumn which was ploughed in in Spring.

An annual Autumn dressing of two cwt. superphosphate and 1 cwt. sulphate of potash per acre was applied with the cover crop. The Spring dressing consisted of two parts superphosphate, one part sulphate of potash and one to three parts sulphate of ammonia at the

rate of 2 lb. to 6 lb. per tree according to size. One ton per acre ground lime was applied the first Winter.

The orchard was thoroughly drained. Trees that had fallen over were re-erected by wires running from buried logs and bolted into the leaders at the opposite side of the tree. A general spray programme (known as Cunningham's, 1935) was put in force and obtained effective control over the various pests and diseases which were rife, including codling moth. The second part of the paper deals in detail with results obtained with the various sprays used. Apart from disease control, much of the orchard's restoration to health is attributed to the improved drainage.—"Orchardist," N.Z.

Peach Growing in Massachusetts.

Peach growing in Massachusetts is favoured by good local markets, but suffers from certain adverse conditions. Winter injury, oriental fruit moth, X-disease and the hurricane of 1938 reduced the number of trees in the State from about 304,000 in 1929 to 106,000 in 1939. Observations show that buds are killed in the experiment station orchards at temperatures of—14 deg. or 15 deg. F. regardless of their stage of development. Since, however, usually not more than about 5 per cent. of the buds develop into mature fruits the loss may not be too great if the remaining buds are well distributed.

It was demonstrated in experiments that increased storage of reserve materials contributes to hardiness, whereas increased storage of water and nitrogen has the opposite effect.

The cultural practice deduced from these results is:

1. To fertilize early in the Spring.
2. To cultivate thoroughly during the early part of the season and then sow a cover crop, and
3. To thin adequately.

Trees which have suffered wood injuries should not be pruned until the extent of the damage can be observed accurately. After the dead parts have been removed liberal application of fertilizers and not too severe pruning will hasten the recovery of the tree. Brief descriptions are given of 10 Peach varieties and their ripening season is indicated. Further advice on the establishment and management of a Peach orchard relates to sites and soils, cultivation and application of fertilizers, pruning, thinning, pest and disease control and harvesting. Since X-disease or yellow-red virus spreads hardly, if at all, from Peach to Peach but rapidly from choke Cherry to Peach, all choke Cherry trees around the site should be eliminated by spraying with a chemical weed killer. — J. S. Bailey, Bulletin Massachusetts Agric. Exp. Station.

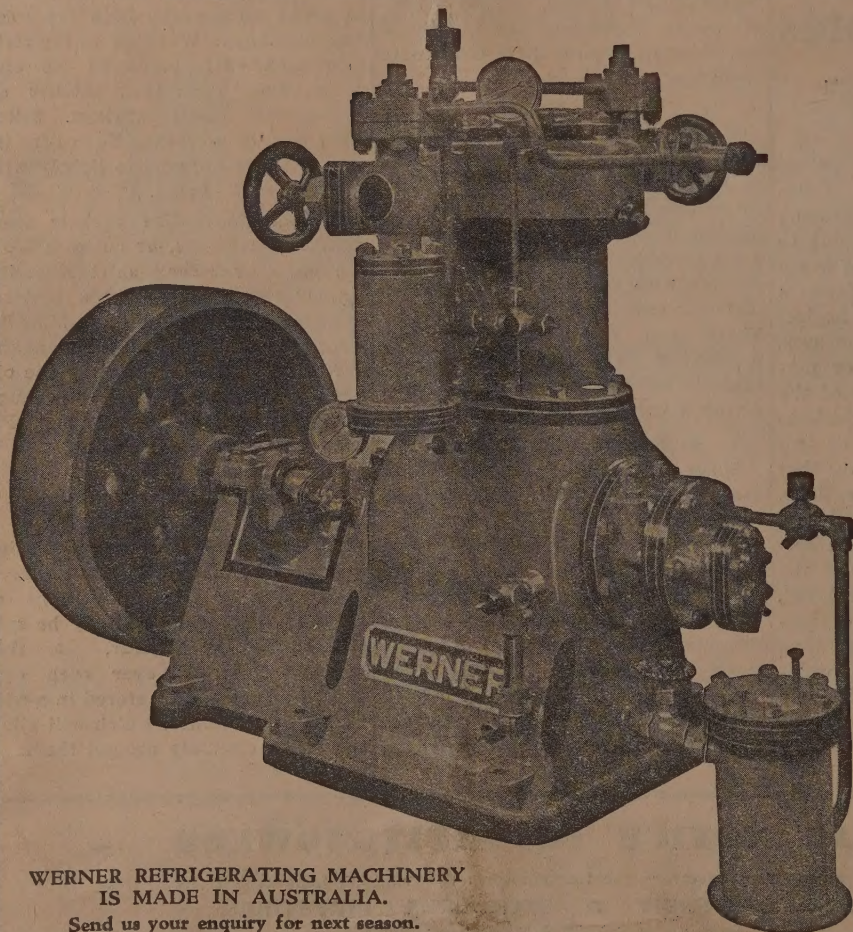
The Nature and Fertilizing Value of Phosphorus in Sewage.

In experiments carried out at the Indian Institute of Science, Bangalore, application of sewage gave better response than an equivalent dosage of nitrogen in a soil deficient in phosphoric acid. Application of phosphorus to this soil increased the yield as well as the phosphorus content of the plants. Six tables give detailed results of analyses and a fractionation of sewage and sludge, of the response of various crops to different treatments of sewage farm soils.—K. G. Joshi, "Current Science," India.

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